CLAIMS

What is claimed is:

1. A system for adjusting audio output comprising:

a transmitter unit adapted to be carried by a user, the transmitter unit comprising a memory and a signal transmitter; and

a sound generating system comprising a sound generator, a signal receiver, means for altering a sound signal from the signal generator based upon a signal transmitted by the transmitter to the receiver, and at least one acoustic transducer coupled to the altering means.

2. A system for adjusting audio output as in claim 1 wherein the memory comprises hearing information regarding a user's auditory characteristics.

3. A system for adjusting audio output as in claim 1 wherein the transmitter unit further comprises a battery connected to the signal transmitter.

4. A system for adjusting audio output as in claim 3 wherein the memory comprises a nonvolatile memory.

5. A system for adjusting audio output as in claim 2 wherein the transmitter unit is adapted to broadcast the hearing information at periodic time intervals.

6. A system for adjusting audio output as in claim 1 wherein the transmitter unit is adapted for reprogramming of the memory.

7. A system for adjusting audio output as in claim 1 wherein the altering means comprises a processor connected to the signal receiver and the sound generator.

8. A system for adjusting audio output as in claim 7 wherein the altering means comprises an electrical sound signal modifier connected to an output of the sound generator and controlled by the processor.

9. A system for adjusting audio output as in claim 8 wherein the altering means comprises a second sound generator connected to a first output from the electrical sound signal modifier.

10. A system for adjusting audio output as in claim 9 wherein the altering means further comprises a combiner connected to a second output from the electrical sound signal modifier and connected to an output from the second sound generator.

11. A system for adjusting audio output as in claim 8 wherein the electrical sound signal modifier is adapted to filter target frequencies, based upon information in the signal transmitted by the transmitter, which need amplitude and/or frequency modification.

12. A system for adjusting audio output as in claim 8 wherein the electrical sound signal modifier comprises a bandpass filter array.

13. A system for adjusting audio output as in claim 12 wherein the electrical sound signal modifier comprises a frequency shifter.

14. A system for adjusting audio output as in claim 1 wherein the at least one acoustic transducer comprises speakers.

15. A portable signal transmitter unit comprising:

a battery;

a signal transmitter connected to the battery for transmitting a wireless signal; and

a memory connected to the signal transmitter, the memory comprising hearing information regarding a user's auditory characteristics,

wherein the signal transmitter is adapted to transmit at least a portion of the hearing information stored in the memory.

16. A portable signal transmitter unit as in claim 15 wherein the memory comprises a nonvolatile memory.

17. A portable signal transmitter unit as in claim 15 wherein the transmitter unit is adapted to broadcast the hearing information at periodic time intervals.

18. A portable signal transmitter unit as in claim 15 wherein the transmitter unit is adapted for reprogramming of the memory.

19. A sound generating system comprising:

a processor;

a first sound generator coupled to the processor;

a second sound generator coupled to the first sound generator by a programmable sound signal modifier;

a combiner for combining an output from the second sound generator with a portion of an output from the signal modifier; and

a wireless signal receiver coupled to the processor, the receiver being adapted to receive a hearing information signal containing a user's auditory characteristics,

wherein the processor is adapted to configure the modifier based upon the hearing information signal received by the receiver.

20. A sound generating system as in claim 19 wherein the signal modifier is adapted to filter target frequencies, based upon information in the hearing information signal, which need amplitude and/or frequency modification.

21. A sound generating system as in claim 19 wherein the sound signal modifier comprises a bandpass filter array.

22. A sound generating system as in claim 21 wherein the sound signal modifier comprises a frequency shifter.

23. A method of altering an electrical sound signal comprising steps of:

receiving a hearing adjustment signal from a portable transmitter, the hearing adjustment signal comprising information regarding a user's auditory characteristics;

configuring a variable signal modifier based upon the received hearing adjustment signal; and

transmitting the electrical sound signal through the variable signal modifier and outputting at least one

altered electrical sound signal which has been altered based upon the user's auditory characteristics contained in the hearing adjustment signal.

24. A method as in claim 23 wherein the variable signal modifier comprises a bandpass filter array which filters target frequencies which need amplitude and/or frequency modification.

25. A method as in claim 24 wherein the variable signal modifier comprises a first output and a second output, the first output comprising frequencies filtered by the bandpass filter array and the second output comprising frequencies not filtered by the bandpass filter array.

26. A method as in claim 25 wherein the first output is amplified by a sound generator and then combined with the second output.

27. A method as in claim 24 wherein the variable signal modifier comprises a frequency shifter which shifts a frequency of at least one of the target frequencies.

28. A method as in claim 23 wherein the step of receiving a hearing adjustment signal comprises at least two signals comprising a first signal corresponding to a right ear of the user's auditory characteristics and a second signal corresponding to a left ear of the user's auditory characteristics.

29. A method as in claim 23 wherein the step of receiving a hearing adjustment signal comprises receiving separate information regarding the user's auditory characteristics for a left ear and for a right ear.